

THE PORT AUTHORITY  
OF NEW YORK AND NEW JERSEY

ENGINEERING PROGRAM MANAGER  
WORLD TRADE  
CENTER  
CHIEF ELECTRICAL ENGINEER

1 8/23/99 AS-BID  
No. Date Revision Approved

ENGINEERING DEPARTMENT  
DESIGN DIVISION

WORLD  
TRADE  
CENTER

ELECTRICAL

Title  
FIRE ALARM SYSTEM  
DEVICE UPGRADE  
PHASE III  
1 WORLD TRADE CENTER  
CONTRACT NO. 3  
89th FLOOR  
SPEAKER  
INSTALLATION AND  
REMOVAL PLAN

This drawing subject to conditions in Contract. All  
inventions, ideas, designs and methods herein are  
reserved to Port Authority and may not be used  
without its written consent.

S. FELDSTEIN N. APOSTLE A.S.  
Designed by Drawn by Checked by

AUGUST 9, 1999  
Date

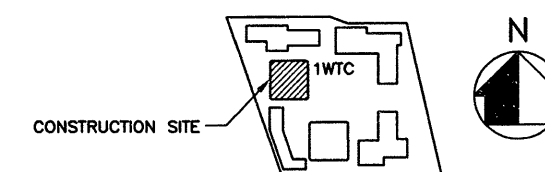
WTC-861.176 E-089-2  
Contract Number Drawing Number

NOTES:

1. FOR LEGEND, ABBREVIATIONS, AND GENERAL NOTES, SEE DWG. E-1.  
FOR INSTALLATION DETAILS, SEE DWG. E-2. FOR WIRING DIAGRAMS,  
SEE DWG. E-3.
2. DISCONNECTION OF EXISTING SPEAKER CIRCUIT AND CONNECTION  
OF INSTALLED SPEAKER CIRCUIT AT THE TSC AND/OR THE EXISTING  
SPEAKER SHALL BE MADE AFTER INSTALLED SPEAKER WIRING IS TESTED  
AND OPERATIONAL. THIS WORK SHALL BE DONE IN THE PRESENCE OF  
THE ENGINEER.
3. DISCONNECTION AND REMOVAL OF EXISTING TENANT AMPLIFIER AND  
ASSOCIATED CONDUIT AND WIRING UP TO THIS SPEAKER SHALL BE MADE  
AFTER INSTALLED SPEAKERS ARE TESTED AND OPERATIONAL. THIS WORK  
SHALL BE DONE IN THE PRESENCE OF THE ENGINEER.
4. CONTRACTOR SHALL REMOVE EXISTING SPEAKERS ONLY AFTER INSTALLED  
DEVICES ARE OPERATIONAL.
5. FOR REMOVAL AND PATCHING PLAN DETAILS (P-1, P-2, P-3 & P-4),  
SEE DWG. A-1.
6. ALL REMOVED SPEAKERS SHALL BE RETURNED TO THE ENGINEER.
7. ALIGN CENTER LINES OF SPEAKERS (ON WHICH WORK IS TO BE DONE  
IN THE CORRIDORS) TO THE CENTER LINE OF THE CORRIDOR. IN CASE  
OF CONFLICT WITH EXISTING CEILING LIGHTING AND GRILLS, FINAL  
LOCATION OF SPEAKERS SHALL BE ADJUSTED WITH THE APPROVAL OF  
THE ENGINEER.
8. SINCE FIRE ALARM CIRCUIT LENGTH IS CRITICAL, ROUTING AND  
INSTALLATION OF ALL FIRE ALARM CIRCUITS SHALL BE AS SHOWN  
ON DRAWING.
9. COORDINATE REMOVAL OF ALL SPEAKERS WITH ENGINEER. DISCONNECT  
AND ABANDON EXISTING SPEAKER CIRCUITS IN CEILING. TAPE ENDS OF  
ABANDONED CONDUCTORS AND TAG AS ABANDONED. THIS WORK SHALL  
BE DONE IN THE PRESENCE OF THE ENGINEER.

SPEAKER CIRCUIT/LOADING TABLE

SPEAKER TAP/db SETTING	Watts	1/8	1/4	1/2	1	2	4	TOTAL POWER (Watts)	CIRCUIT LENGTH (ft.)
SPK-A	7	2	7	1				5.875	775
SPK-B	8	2	5	1				5.000	845
SPK-C	7	3	4	3				6.625	761
SPK-D	6	4	5	2				6.250	597
GRAND TOTAL								23.750	2978



KEY PLAN

0 12 24  
SCALE IN FEET

